

### **ABSTRACT**

Delivering heat from modern high temperature solar collectors to hot water storage tanks is more effectively done using unpressurized when cold, self-pressurized on heat up, automatic air eliminating, higher temperature fluid loops. A pressurizing valve, an overflow reservoir and a vacuum relief valve are used. Non-toxic water/antifreeze mixtures are pressurized up to about two atmospheres resulting in a 265° Fahrenheit boiling point. Loss of circulation under full sun results in solar collector boiling under pressure. The steam generated in the solar collector is condensed in the pressurized liquid-to-air radiator, a steam heat pipe, and water is returned to the solar collector to keep it completely full of fluid and steam. A set of pressure-actuated air dampers on the solar collector can also be used to shed the excess solar collector heat.